

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of:

Juho Salo, et al.

Serial No.: 09/893,421

Filed: June 29, 2001

For: Improvements in and Relating to a
Broadcast Network

Atty. Docket No.: 004770.00722

Group Art Unit: 2623

Examiner: Saltarelli

Confirmation No.: 5222

REPLY BRIEF

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Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. § 41.41(a)(1), Appellant submits this Reply Brief to the Board of Patent Appeals and Interferences in response to the Examiner's Answer mailed on April 27, 2009. If any fees are required or if an overpayment is made, the Commissioner is authorized to debit or credit our Deposit Account No. 19-0733, accordingly.

Status of the Claims

Claims 45-63, 65-89 and 101 remain in the application. Claims 1-44, 64 and 90-100 were previously cancelled. All pending claims (45-63, 65-89 and 101) stand rejected. Applicant is appealing all pending claims (45-63, 65-89 and 101). All claims identified above are shown in the attached appendix.

Grounds of Rejection to be Reviewed on Appeal

The following grounds of rejection are to be reviewed on appeal:

- Whether claims Claims 45-63, 65-89 and 101 are unpatentable under 35 U.S.C. § 103(a) over Gotwald (US 5,987,518) in view of Banker et al. (US 5,497,187) and Nicolas et al. (US 5,453,797).

Argument

Applicants have carefully reviewed the Examiner's Answer dated April 27, 2009. In this Reply Brief, Applicants address specific mischaracterizations of the cited references within the Examiner's Answer. Applicants, however, respectfully submit that Applicants' Brief dated January 26, 2009 provides Applicants' reasons for allowance of the pending claims. Therefore, Applicants do not waive any arguments not expressly reiterated here, but rather present the arguments below to rebut specific issues raised in the Examiner's Answer.

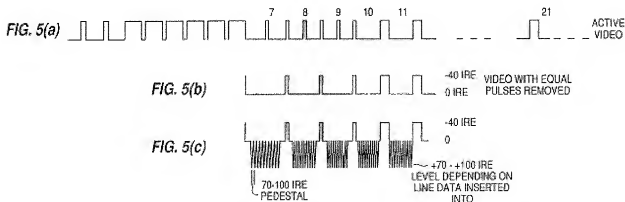
1. The Examiner's Misinterpretation of Banker

As discussed in the Applicants' Appeal Brief (*e.g.*, page 20-22), the Banker reference teaches the **serial** transmission of data (as opposed to the simultaneous transmission of data). In fact, Banker explicitly states that "[d]ifferent groups of data are transmitted on a **serial** data channel...." (Col. 10, ll. 37-38; emphasis added). Despite the abundance of evidence demonstrating this point, the Examiner's Answer asserts that the Applicant's interpretation of Banker "has no actual support in the Banker reference." (Examiner's Answer, page 12). Applicants emphatically disagree. As discussed below, the Examiner's own admission within the Examiner's Answer reinforces the fact that Banker teaches serial transmissions of data. Second, Banker explicitly and repeatedly supports the Applicants' interpretation that Banker discloses serial transmission of data.

At page 13 of the Examiner's Answer, the Examiner admits that data streams 7, 8, and 9 of Banker show a vertical blanking interval. This admission reinforces the fact that the signals of streams 7, 8, and 9 are serially transmitted. In fact, Banker explicitly states that: "[l]ines 7-9 of the vertical blanking interval of an NTSC standard television signal comprises three times 63.5 microseconds **duration** or approximately 190 microseconds. (Banker, Col. 24, ll. 34-37). Thus, as clearly understood by a person of skill in the art, if each of the three lines (elements 7, 8, and 9) of the vertical blanking interval are 63.5 microseconds in duration, then the **serial** transmission of these three lines would be approximately 190 milliseconds. (*e.g.*, $63.5 \times 3 = 190.5$) Conversely, the simultaneous transmission of the three lines would be as short as 63.5 microseconds in duration. Banker's disclosure, however, does not require the reader to perform this basic arithmetic, as Banker expressly states that the "[d]ifferent groups of data are transmitted on a **serial** data channel...." (Col. 10, ll. 37-38; emphasis added). In this regard,

nothing could be further from the facts than the Examiner's statement that Applicants' interpretation of Banker "has no actual support in the Banker reference." (Examiner's Answer, page 12).

Second, in addition to explicitly stating that the data is "transmitted on a serial data channel," Banker's drawings repeatedly show serial transmission (as opposed to simultaneous transmission). First, as shown below, Figure 5a (as well as Figs 5b and 5c) of Banker, shows the serial arrangement:



As seen in Figs. 5a-5c, a chronology of the changes performed on the transmitted content clearly demonstrates that the serial arrangement is preserved. Indeed, any "streams" of Banker are merely transmitted in the serial data channel. For example, streams (7), (8), and (9) (shown in Fig. 5a) are not simultaneously transmitted, but instead are transmitted on recited the serial data channel). The same streams are preserved in Figure 5(b) with the removal of only equalizing pulses at the select lines.

Despite these repeated teachings of serial transmission, the Examiner's Answer alleges that there "is absolutely no relation between the streams disclosed in col. 11, lines 1-17 of Banker [streams 7, 8, and 9] with the standard VBI lines [streams 7, 8, and 9] in fig. 5(a)." (Examiner's Answer, page 13). Applicants strongly disagree. In fact, the Examiner's Answer admits that "[t]he cited section of Banker, col. 11, lines 1-17, identifies a set of data streams by **number, 7, 8, and 9.**" (See page 12, emphasis added). The Examiner, however, is now asserting that the numbered streams 7, 8, and 9 cited by the Examiner are not the same numbered streams 7, 8, and 9 referenced throughout the Specification, including Fig. 5a. The Examiner did not provide (and Applicants cannot locate) any evidence that Banker used elements 7, 8, and 9 differently or somehow redefined what the elements are in different portions of the application

than when stating that “[l]ines 7-9 of the vertical blanking interval of an NTSC standard television signal comprises three times 63.5 microseconds *duration* or approximately 190 microseconds. (Banker, Col. 24, ll. 34-37). Applicants, therefore, respectfully submit that a person of ordinary skill in the art reading Banker would readily understand that the data streams 7, 8, and 9 disclosed throughout the specification would be the same numbered data streams shown in the Figures.

For at least these reasons and the reasons set forth in the Applicants’ Appeal Brief, Applicants respectfully request reversal of the rejection of independent claims 45, 50, 56, 59 and 101. For at least the same reasons, Applicants respectfully request withdrawal of the rejection of the dependent claims which depend from the independent claims.

2. The Examiner’s Misinterpretation of Nicolas and Applicants’ Arguments Against Nicolas

As more elaborately discussed in the Applicants’ Appeal Brief, (*e.g.*, pages 15-20) Nicolas is not applicable to the subject matter of the pending claims. Applicants also noted that that the Examiner’s rejections erroneously equate the term “power” with “power range.” The Examiner’s Answer merely attempts to repeat the Applicants’ arguments, however, mischaracterizes them. Specifically, the Examiner’s Answer alleges that:

Appellant argues that ‘power’ does not necessary equate to ‘power range’, given that a signal bearing 100x of the amount of data could have 10x the power but still be subject to significant enough transmission errors such that the range is less than the signal to which it is being compared.

(Examiner’s Answer, page 10). The above-cited text is not even close to what the Applicants argued. Rather, as set forth in the Appeal Brief:

[In the] Advisory Action, the Examiner argues that because Nicolas teaches that the “high priority data represents one fifth of the total power,” this “is a demonstration that the described modulation scheme is very similar, if not the same, as applicant’s claimed modulation scheme.” (Advisory Action dated September 19, 2008, continuation sheet, 4th paragraph). Applicants disagree with this statement for several reasons. First, the statement that one stream may have higher power than another stream indicates nothing about the range of the two streams. Specifically, “power” does not always equate to “power range.” Rather, one skilled in the art first needs to know the amount of data (*i.e.*, the quantity of bits) being transferred. In fact, if one stream has 10 times the power as a second stream, however, has 100 times for bits being transmitted, the effective maximum range of the higher powered stream may be less. Nicolas never discusses the

number of bits transmitted in each stream. In fact, Nicolas teaches away from having one stream with a further maximum range. Indeed, upon review of Nicolas, one skilled in the art would be motivated to keep the maximum range of the two streams about the same distance because both streams are required for the signals to be useful. Specifically, the streams each form part of the HDTV signal and only one of the streams comprises the required information needed for timing recovery. Thus, there is no teaching or suggestion of at least one of the “data streams [being] configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal.”

(Applicant’s Appeal Brief, page 18). The Examiner’s Answer does not address the arguments set forth above. Rather, instead of attempting to provide evidence on how or why the Applicants’ arguments are incorrect, the Examiner attempts to twist the Nicolas reference to include different terms not used by Nicolas. The Examiner’s reason for adding new terms and meaning to what Nicolas discloses is that “the Nicolas document is simply a poorly drafted one, evidenced by ample typographical errors.” (Examiner’s Answer, page 10). In this regard, Applicants ask the Board to consider, what exactly is the subject matter that is Nicolas enables, when the Examiner himself admits that the document is poorly drafted when trying to find disclosure to reject the pending claims. For example, Nicolas uses the terms “stream” “channel,” “carrier,” and “data” within the text describing the specific interference-removing design without a clear indication of their function and/or relationship, if any, relative to each other. In this regard, the Examiner is using hindsight to speculate what Nicolas could have meant with the benefit of Applicants’ disclosure.


For at least these reasons and the reasons set forth in the Applicants’ Appeal Brief, Applicants respectfully request reversal of the rejection of independent claims 45, 50, 56, 59 and 101. For at least the same reasons, Applicants respectfully request withdrawal of the rejection of the dependent claims which depend from the independent claims.

CONCLUSION

The rejections contained in the Action dated July 25, 2008 should be reversed for at least the reasons recited above. Reversal of the rejections is respectfully requested.

Respectfully submitted,
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Date: June 24, 2009


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CLAIMS APPENDIX

1-44. (Cancelled)

45. An apparatus comprising:

a classifier connectable to a source of content and operable to place the content into at least one of a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal.

46. An apparatus as claimed in claim 45, wherein a classification of content is made in accordance with a data type of the content.

47. An apparatus as claimed in claim 46, wherein the classifier is connectable to a data stream of content in the form of data elements and a splitter is connected to the output of the classifier wherein the classifier identifies the data type of each element of the data streams and inserts a marker into said data streams indicative of a priority assigned to the element such that the splitter subsequently places each data element, in accordance with the marker, into a corresponding hierarchical transport stream for subsequent transmission by a network.

48. An apparatus as claimed in claim 46, further including a connection to a look-up table accessible in use by the classifier, the table comprising a set of profiles, each profile including at

least one definition of a priority for a particular data type wherein a selection by the classifier of a particular profile for identifying the data type of each element is determined by a network.

49. A apparatus as claimed in claim 45, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

50. A method comprising:

classifying content received for transmission in a hierarchical network; and

placing the content into at least one of a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the content corresponding to the classification of the content wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal.

51. A method as claimed in claim 50, further comprising:

defining a data stream for a particular classification.

52. A method as claimed in claim 51, further comprising:

establishing a set of profiles, each of which includes at least one definition of a data stream for a particular classification wherein a selection of a particular profile is determined by the network.

53. A method as claimed in claim 52, wherein the network determines the selection of a profile on a basis of an intended recipient of the content.

54. A method as claimed in claim 52, wherein the network determines the selection of a profile on the basis of a service providing said content.

55. A method as claimed in claim 52, wherein the network determines the selection of a profile on a basis of network load.

56. A system comprising:

a source of content deliverable, to a network having head end equipment operable to place content into at least one of a plurality of selected hierarchically modulated data streams for simultaneous transmission which respectively each data stream has a different priority assigned to the content therein wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal; and

a terminal operable to receive the data stream from the head-end equipment.

57. A system as claimed in claim 56, wherein the terminal provides a return channel connectable, in use, to the network, such that a request for a delivery of content may be originated by the terminal.

58. A system as claimed in claim 56, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

59. A method comprising:

receiving a request for content;

passing said request to a network gateway;

subsequently receiving content identified in the request in a form of at least one content element;

classifying the at least one content element;

assigning a priority to the at least one content element in accordance with the classification; and

assigning the content element to at least one of a plurality of hierarchically modulated simultaneously transmitted data streams related to the priority assigned to the content wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal.

60. A method as claimed in claim 59, further comprising:

identifying a user identity from the request; and

obtaining a corresponding user profile in accordance with which profile priority is assigned to the at least one content element.

61. A method as claimed in claim 59, wherein the request is received in a return channel established by a terminal of a public land mobile network via a public switched telephone network and the content element is delivered over a broadband broadcast network.

62. A method as claimed in claim 59, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

63. A computer-readable medium comprising computer-executable instructions that when executed perform the method of claim 59.

64. (Cancelled)

65. An apparatus as claimed in claim 47, further comprising:

a connection to a look-up table accessible in use by the classifier, the table comprising a set of profiles, each of which includes at least one definition of a priority for a particular data type wherein a selection by the classifier of a particular profile for identifying a data type of each element is determined by the network.

66. A method as claimed in claim 51, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

67. A method as claimed in claim 52, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

68. A method as claimed in claim 53, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

69. A method as claimed in claim 54, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

70. A method as claimed in claim 55, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

71. A method as claimed in claim 48, wherein the creation of at least one of the profiles in the set of profiles is based upon a factor selected from the group consisting of: the terminal type, the level of service, and combinations thereof.

72. A method as claimed in claim 52, wherein the establishment of at least one of the profiles in the set of profiles is based upon a factor selected from the group consisting of: the terminal type, the level of service, and combinations thereof.

73. A method as claimed in claim 60, wherein at least one of the profiles in the set of profiles is based upon a factor selected from the group consisting of: the terminal type, the level of service, and combinations thereof.

74. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 50.

75. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 51.

76. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 52.

77. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 53.

78. A system as claimed in claim 57, wherein said hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

79. A method as claimed in claim 59, wherein said request is received in a return channel established by a terminal of a public land mobile network via a public switched telephone network and the content element is delivered over a broadband broadcast network.

80. A method as claimed in claim 59, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

81. A method as claimed in claim 60, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criterion selected from the group consisting of: quality of service, delivery speed, error rate, and combinations thereof.

82. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 59.

83. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 60.

84. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 61.

85. A method as claimed in claim 54, wherein the network is a terrestrial digital video broadcast network (DVB-T).

86. A method as claimed in claim 62, wherein the network is a terrestrial digital video broadcast network (DVB-T).

87. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 71.

88. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 54.

89. A computer-readable medium with computer-readable instructions that when executed perform the method according to claim 55.

90. – 100. (Cancelled)

101. A wireless apparatus comprising:

a receiver configured to receive a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content wherein the terminal is configured to simultaneously receive the contents of any of the data streams having adequate C/N ratio at the location of the terminal.